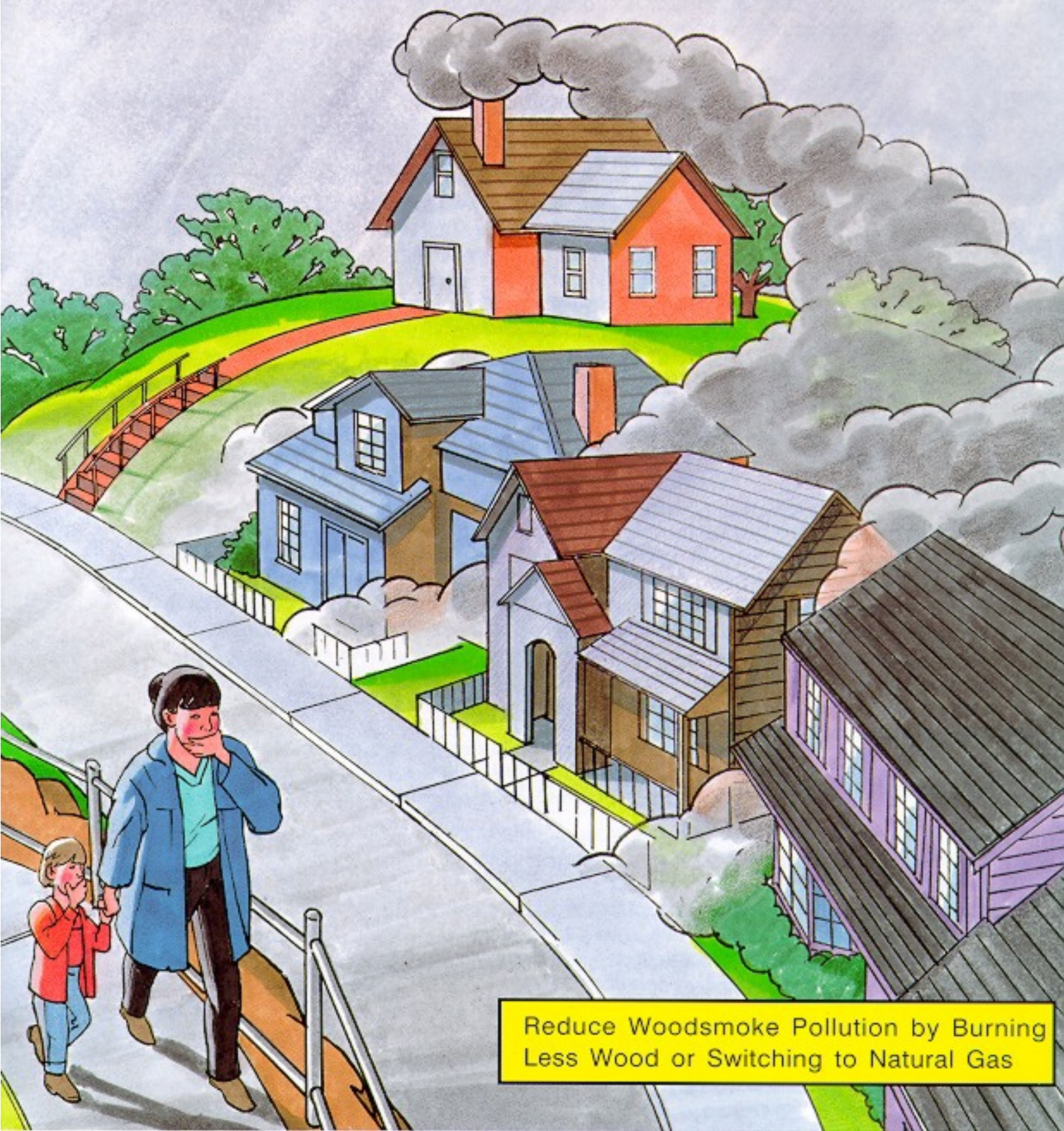


WOODBURNING HANDBOOK

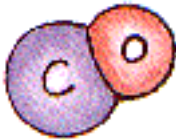


Reduce Woodsmoke Pollution by Burning
Less Wood or Switching to Natural Gas

What *is* Woodsmoke? It's AIR POLLUTION!

It's Also Fuel from Your Firewood Which Has Escaped Burning...

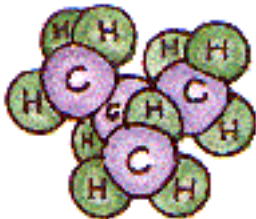
Complete combustion gives off light, heat, and the gases carbon dioxide and water vapor. Burning wood produces the above, **and**, because wood burns only partially in most cases, it also produces **the following major air pollutants**, which are regulated by State and federal rules because of their known health effects:



CO - carbon monoxide - odorless, produced in large amounts by burning without enough air, **CO reduces the blood's ability to supply oxygen to body tissues**. Small amounts in the air can stress your heart and reduce your ability to exercise. Those most at risk from CO poisoning are the unborn child, and people with heart, circulatory or lung disease, or anemia.



NO₂ - nitrogen dioxide - impairs proper functioning of the respiratory system and its ability to fight infection. NO₂ and NO also combine with VOCs to make **ozone** and with water vapor to form **acid rain** or acid fog.



VOCs - Volatile Organic Compounds - evaporated carbon compounds (**some toxic - see below**) which react with NO₂ and NO in sunlight to form ozone, or photo-chemical **smog**. **Ozone injures the lungs and makes breathing difficult, especially in children and exercising adults.**

Woodburning also produces **Inhalable Particulate Matter**, also known as **PM₁₀** and **PM_{2.5}** (solid or liquid particles 10 microns or less in diameter, and 2.5 microns or less in diameter, respectively). PM from woodsmoke consists of **droplets of condensed organic vapors** (wood tars and gases), **soot** (unburned carbon), and **ash** (unburnable minerals). Most woodsmoke particles average less than one micron (one millionth of a meter) in size and can stay airborne for weeks. These particles can travel deeply into the lungs when inhaled, causing irritation and coughing. **PM₁₀ and PM_{2.5} particles from woodsmoke can remain trapped in your lungs for years, causing chronic lung diseases and cancer.**

Smoke Contains Toxic Pollutants

Woodburning also produces dioxin, a group of chlorinated compounds that are among the most toxic substances known to man. In the Bay Area, one-third of the total dioxin is generated by woodburning. In addition, woodsmoke contains other irritating, toxic and/or cancer-causing substances such as benzene, formaldehyde and benzo-a-pyrene, a polycyclic aromatic hydrocarbon (PAH).



Air Pollution Sources Increase With Population...

Air pollution affects millions of Californians every day. It damages our health, our crops, our property and our environment. Vehicles and industries produce most of the air pollution in cities. City pollution in turn blows into rural areas where it mixes with smoke from agricultural burning. **But in neighborhoods everywhere across California, residential woodburning is a growing source of localized air pollution.** Most wood heaters (woodstoves and fireplaces) release far more air pollution, indoors and out, than heaters using other fuels. **In many areas, woodsmoke significantly degrades air quality and visibility.**

The California Air Resources Board and the Bay Area Air Quality Management District are asking you to **help clear the air of woodsmoke.**



You *CAN* Make a Difference!

Take These Steps To Reduce Woodsmoke Pollution!

1. Stop Burning Wood!

- Pollute less by finding a cleaner way to heat your home (page 13).

2. Switch to a Gas Fireplace or Insert:

- Convert your fireplace to gas with a new gas fireplace insert (page 6).

3. If You Must Use Wood, Burn Less Wood:

- Reduce your heating needs by weatherizing your house (page 4).
- Replace your old woodstove or fireplace with a new certified model, and get more heat and less pollution while burning less wood (page 8).

4. Change the Way You Operate Your Stove or Fireplace:

- Burn only clean, seasoned wood and nonglossy white paper (page 10).
- Build small, hot fires instead of large smoldering ones (page 10).
- Burn seasoned cordwood, densified logs and firelogs (pages 6 & 9).
- Watch your chimney for smoke and have it inspected often (pages 11 & 12).
- Follow your woodheater's operating instructions carefully (page 11).

5. Don't Use Your Fireplace on Spare the Air Nights

- Don't burn wood when the District issues a Spare the Air Tonight request (back cover).

6. Urge Your City or County to Adopt a Woodsmoke Ordinance

- Lobby your local government to adopt the Air District's model woodsmoke ordinance to reduce future air pollution from new homes (back page).

Smoke Hangs Around in Winter...

Cold nights, with little wind - common weather conditions in the winter months when we heat our homes - often cause smoke and other air pollution to accumulate close to the ground overnight. These stagnant conditions can last for days.

This is a big problem in California valleys. As night falls, ground level air cools and cold air also slides down the valley walls, pooling on the valley floors. With little or no wind **temperature inversions** can then occur - warm air layers act as a lid over the cold air in the valleys, trapping smoke and other air pollution close to the ground. And, as home heating systems operate mainly in the evening, **the smoke from stoves and fireplaces remains at ground level and collects overnight in the air you and your neighbors must breathe. Yes, it *DOES* seep into your homes.**



Don't Smoke Your Neighbors Out!

Smoke from neighborhood stoves and fireplaces is a common source of both odor and reduced visibility, the air pollution problems that people complain about the most. These, plus the health-related problems caused by inhaling smoke pollutants, add up to significant health and welfare costs for individuals and the community. So be a good neighbor and limit your burning, and if you do burn, burn correctly. **But Do Not Burn Wood When the Air Quality is Poor!**



Burning Wood Often Causes Indoor Air Pollution

The EPA has measured indoor air and in many studies found it to contain higher levels of contaminants than outdoor air. Since we spend almost 90 percent of our lives inside, this can have serious consequences for our well-being.

Poorly maintained woodstoves and fireplaces in particular can produce high levels of indoor smoke pollutants. A well-tuned fireplace or EPA-certified stove will still release some pollutants to the air inside your house. Even if you don't burn wood, studies have shown that woodsmoke from neighbors can enter your home and reach up to 70 percent of outdoor levels.

Woodsmoke can aggravate cardiopulmonary health conditions, like asthma and emphysema, and there is evidence linking prolonged exposure to cancer. Respiratory symptoms are particularly pronounced in children younger than five, who have smaller lungs and breathe more often than adults.

Remember, if you can smell smoke, you have a problem.



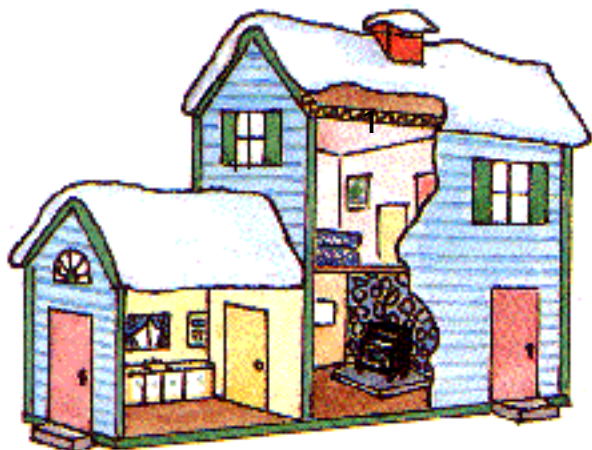
Where Does Your Heat Go?

The Importance of Insulation and Weather-Stripping

Heated air is always escaping from your house, and is replaced by unheated outdoor air. The typical house has one-half to two air exchanges per hour, and more on windy and/or very cold days. If your house has little insulation and many air leaks, you are paying to heat the outdoors. **And if the outside air is smoky, soon your air inside will be, too.**

Some air exchange is necessary because of the many sources of air pollution in the home (wood heater, gas stove, consumer products, cigarettes, etc.) And sufficient fresh air inlets are needed to replace air forced out of the house by exhaust fans, the dryer, furnace, water heater, or wood fire. **But you can reduce your heating needs if you:**

Install Ceiling Insulation (Very Important) - because hot air rises, **much heat is lost** through the ceiling and roof. Wall and floor insulation also reduce heat loss. Recommended amounts have increased in recent years, so be sure your house has all it needs.



Caulk around all windows, doors, pipes, **any** opening into the house.

Weather-strip all door and window openings, and consider installing double-paned glass, outdoor or indoor storm windows, and/or insulated curtains.

Close the damper tightly when the heater is not in use. Stoves and fireplaces allow air to leak out of the house even when they are not operating, unless they are **literally** airtight.

Close off unused rooms if you don't use central heating - don't waste the heat.

Most Fireplaces and Old Woodstoves Are *EXPENSIVE* Heaters Because They Turn a Large Part of Your Firewood Into Smoke, Not Heat!

Why Does This Happen? Because of the Way Wood Burns—



Wood burns **completely** only at **very high temperatures** with enough **oxygen** present. The fuel, heat, and oxygen have to mix together in the same place at the same time. Although all stages of burning actually occur at the same time on a burning log, let's place a "demonstration" log on a hot fire. As temperature rises, it will "burn" in three stages:

1. Boil Off Water - moisture in the log evaporates as it heats up, and hisses and bubbles out through the log's surface as water vapor. This takes longer and **uses up lots more heat energy** if the log isn't really dry. That heat energy could be warming your house instead of drying your wood before it will burn.



2. Vaporize Wood Gases - before burning, firewood "cooks" and forms hundreds of new volatile organic gases and tars plus charcoal (carbon). The gases and tars, a large part of your fuel, vaporize in the heat and stream out of the log in a "wind" of organic gases. **They escape up the flue** because the log temperature at this stage is too low to burn them. As they cool, some of the gases will combine with water vapor to form highly flammable creosote that sticks to the flue walls; other gases condense into smoke particles.



3. Burn Log Charcoal - above 600° F the log "catches fire" and the escaping gases start burning, ignited by nearby flames, but the log charcoal doesn't start to burn and emit heat until the log reaches 1000° F. **Burning the charcoal remainder of the log produces most of the fire's usable heat.** Most of the log's gases and tars will escape unburned; there's still not enough heat or oxygen close to the log's surface to burn them. They don't ignite before reaching 1100° F, and then **only** with enough **oxygen** present.



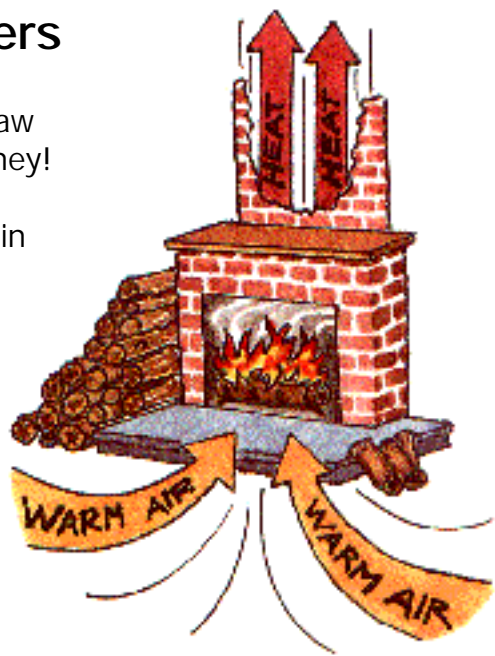
The PM₁₀ pollution from *one* old woodstove, emitting 60 grams/hour of PM₁₀, equals that of *ten* EPA certified stoves (averaging 6 grams/hour PM₁₀), or that of *three thousand* gas furnaces - producing the same amount of heat.

Most Fireplaces Are *NOT* Good Heaters

Most fireplaces rob your house of heat because they draw in lots of the air you've paid to heat and send it up the chimney! Yes, you'll be warmed if you sit within six feet of the fire, but the rest of your house is getting **colder** as outdoor air leaks in to replace the hot air going up the chimney.

Most fireplaces waste wood because with unrestricted air flow, the vaporized wood gases and tars cooked out of your logs go right up the chimney as **smoke**. And all that air helps the fire **burn fast**, so a load of wood lasts only one or two hours.

Most fireplaces can pollute *more* if you install glass doors or a fireplace insert that is not a new, certified clean-burning model. Restricting the air supply reduces the available oxygen and causes the fire to smolder and smoke.



You *CAN* Clean Up Your Air Guzzling Fireplace!

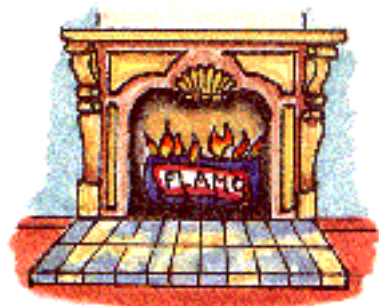
Switch to Gas. Gas fireplaces are gaining in popularity. The new models look like a real wood fire! They are self-contained units which can be fitted into your existing masonry fireplace. They send less of your heated air up the chimney.

This equipment burns cleaner, is easy to start, convenient, safe and inexpensive to operate, and is a good source of heat.



Certified Woodburning Fireplace Inserts have been developed which meet federal emission standards and provide high fuel efficiency. They are available in many sizes and styles to fit into your masonry fireplace. **They provide excellent fire viewing and heat output with very little smoke.**

Burn Manufactured Fireplace Logs. Reduce heat loss and air pollution from your fireplace by burning **firelogs**. Made of dry, fine-particle sawdust **and wax**, these "logs" burn slowly at high temperatures, producing less smoke and sending less air up the chimney. Underwriters Laboratories (UL) recently classified firelogs as safe to burn in UL listed factory built fireplaces. **Firelogs are not recommended for use in woodstoves, however.**



How Much Heat You Get

The **heating efficiency** of any wood heater depends on combining two factors:

1. **How completely it burns the firewood** (combustion efficiency); plus
2. **How much of the fire's heat gets into the room**, rather than going up the flue (transfer efficiency).

How efficiently your wood heater operates depends on 2 more factors:

1. **Its installation** - located on an outside wall? Too big for house? Flue draws well?
 2. **Its operation** - Wood green? Stove stuffed with wood? Fire starved for air?
- Your operating techniques account for the largest variations in your woodstove's heating efficiency.**

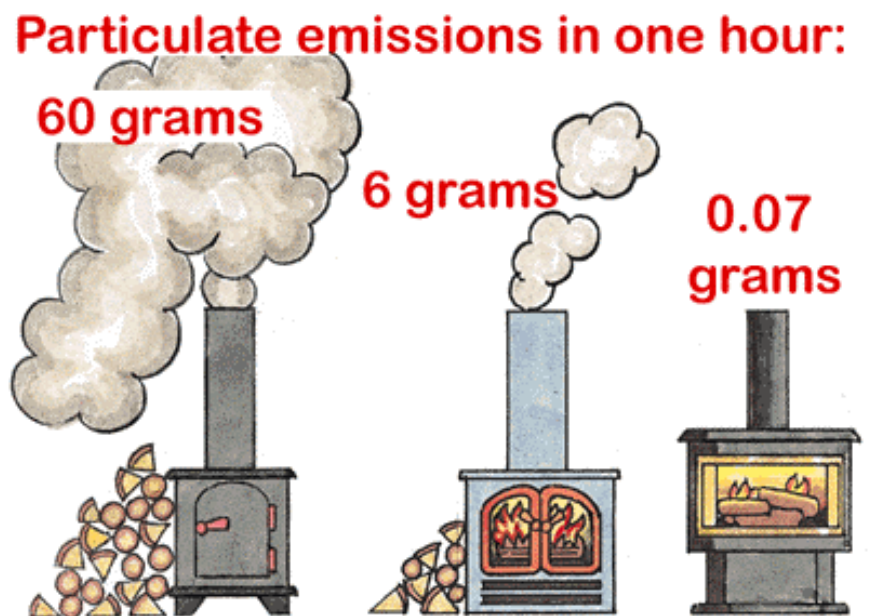
HEATING EFFICIENCY	
Masonry Fireplace	-10% to 10%
Manufactured Fireplace	-10% to 10%
Freestanding Fireplace	-10% to 30%
Antique Stove	20% to 40%
Fireplace Insert	35% to 50 %
Airtight Stove	40% to 50%
Masonry Heater	50% to 70%
Certified Stoves, Inserts, Fireplaces	60% to 80%
Gas Heater	60% to 90%
Electric Heater	100%

Heat With Gas or Get a New EPA-Certified Stove—

Old stoves *WASTE* 30% to 60% of your wood. If your woodstove is more than a few years old and is not EPA-certified, you should seriously consider buying a new certified woodstove.

It will burn *ALL* of your wood, increasing combustion efficiency, producing far less smoke and creosote buildup, and reducing air pollution.

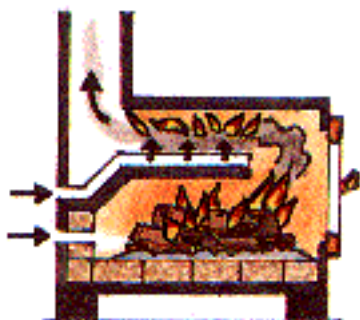
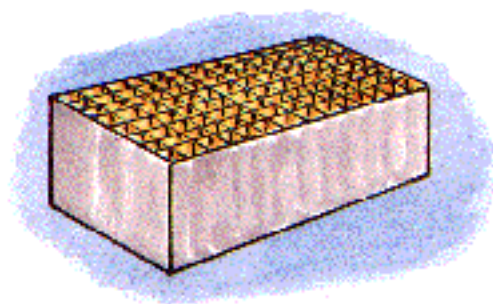
It incorporates the latest and best technology available on transfer efficiency, and will provide more heat for your house and less for your flue!



EPA Certified Woodstoves Heat More and Pollute Less

The EPA has been regulating woodstoves and fireplace inserts since 1988. New stoves manufactured in the US must be EPA-certified. These stoves heat better with less wood, because they burn more of the combustible gases that would otherwise escape as woodsmoke. There are three basic EPA-certified stove designs:

Catalytic Stoves - similar to the smog device on new cars, the catalytic combustor in these stoves allows the volatile gases to burn at lower temperatures. Smoke passes through a ceramic honeycomb coated with a rare-metal catalyst, which allows complete smoke combustion and heat release at 500-700° F. Their efficiency does drop over time and the catalyst device requires replacement after three to seven years of use.



Noncatalytic Stoves - these stoves are designed with baffles and/or secondary combustion chambers which route the burnable gases through the hottest part of the firebox and mix them with sufficient air to burn them more completely.

Pellet Stoves Burn Cleaner Than Cordwood Stoves

The most efficient and least polluting of the new stove designs, most are exempt from certification because they provide excess combustion air. Most have some moving parts and require electricity. The pelleted fuel (compressed wood waste) automatically feeds into the firebox. A fan blows in combustion air and the fire burns hot and clean. Another fan blows room air through a heat exchanger and into the room.



Look for the Permanent EPA Label on the Stove Before You Buy!

For maximum safety and efficiency have a professional installer calculate the correct stove size for the area you want to heat, install the stove, and design and install the chimney.

Follow These Tips on Clean Burning—

Heat More Efficiently *AND* Reduce Air Pollution!

1. Burn a Mix of Softwoods, Hardwoods, Pressed Logs

Start Your Fire With Softwood Kindling

Softwoods (pine, fir) are generally low in density, ignite easily, burn fast and hot and will heat the firebox and flue quickly. They're ideal for kindling and starting your fires but **form creosote easily** due to the high resin (sap) content.



Burn Longer and Cleaner With Hardwood and/or Manufactured Densified Logs

Hardwoods (oak, orchard) are **denser** and take longer to ignite, but burn slower and more evenly, producing less smoke. They also **provide more heat energy** than softwood logs the same size.

Densified logs are compressed sawdust (no wax); at 8600 Btu/lb, they burn longer and emit 25 to 50% less PM₁₀, CO and VOCs than burning cordwood.



2. Burn Only "Seasoned" Firewood

Firewood should dry, or "season" **6 to 12 months minimum** after splitting. Hardwoods dry slower than softwoods and some may take over a year to dry. "Seasoned" firewood by definition contains 20 per cent moisture or less by weight. **The warmer the storage area, and the more air circulation, the faster the drying time.**

To Speed Drying:

Split and Stack - logs dry from the outside in, so split big logs right away for faster drying. Stack loosely in a **crosswise** fashion to get good air circulation.



Store High & Dry - Stack a foot or more above the ground and away from buildings in a sunny, well-ventilated area. Cover the top to keep dew and rain off the wood, but leave the sides open to breezes.

3. Buy Wood Advertised as "Seasoned" Carefully. Look for:



- **Dark colored, cracked ends**, with cracks radiating from the center like bicycle spokes.
- **Light in weight**, meaning there's little moisture left - but hardwood logs will weigh more than softwood.
- **Sound** - hit two pieces together. Wet wood makes a dull "thud" sound. Dry wood rings with a resonant "crack," like a bat hitting a baseball.
- **Easily peeled or broken bark**. No green should show under the bark.

4. Don't Burn Anything but Clean, Seasoned Wood, Manufactured Logs, and Non-Glossy White Paper

No Garbage, Plastics, Rubber, Waste Solvent, Paint or Oil, No Painted or Treated Wood, Particleboard, Plywood, or Saltwater Driftwood, No Coal or Charcoal Briquettes, and No Glossy or Colored Paper. **Burning these materials can produce noxious, corrosive smoke and fumes which may be toxic** and can foul your catalytic combustor, your flue, and the lungs of your family and neighbors. **Warning:** kiln-dried lumber vaporizes too rapidly, causing creosote buildup.



5. Build a Small, *HOT* Fire First To Preheat the Firebox & Chimney



- **Open Damper Wide** - allow in maximum air to fuel the fire. And leave it and other air inlets open for 30 minutes.
- **Start Small & Hot** - leave a **thin** layer of ash for insulation. Crumple a few sheets of newspaper and add some small pieces of kindling, then light. Add bigger kindling a few at a time as the fire grows. Get it burning **briskly** to form a bed of hot coals. Now add 2 or 3 logs.
- **Position the logs you add carefully** - place close enough together to keep each other **hot**, but far apart enough to let sufficient air (**oxygen**) move between them.

**Light & Refuel Your Fire Quickly and *CAREFULLY*,
As These Are The Two Times It Will Smoke the Most.**

6. Refuel While the Coals Are Still Hot!

Open the draft controls and damper **one minute before** opening the stove door. This helps prevent backpuffing of smoke into the room.

Preheat again by placing a few pieces of kindling on the red hot coals. Add more as they catch fire. Add a **few** larger pieces. **Small, frequent loading smokes less than a big load in most older stoves.**



After refueling, leave the dampers and inlets open for about 30 minutes. The fire will get plenty of air and burn hot, retarding creosote formation (most forms early in a burn). You'll know the chimney is heated again when the new logs burn vigorously.

7. Maintain Your Fire Properly—Watch the Temperature

Don't Close the Damper or Air Inlets Too Far - the fire will smoke from lack of air.

Follow the Stove Manufacturer's Instructions Carefully. And be sure that **any** family member who operates the stove is also familiar with these instructions.

***YOUR ACTIONS* Determine How Efficiently Your Stove Will Operate.** A good stove is designed to burn cleanly and efficiently, but it can't do its job right if **you** don't cooperate.

8. Lights Out, Fires Out!

***DO NOT* Burn Overnight** - it's a major fire hazard. And it's too tempting to choke the fire for air to slow burning, and then pollute the neighborhood all night. This can also lead to backdrafting the smoke into your own home, causing very hazardous indoor air pollution.

Build a Small, Hot Fire and Let It Burn Out Completely, relying on your home's insulation to hold in enough heat for the night. **Then Close the Damper Tightly.**



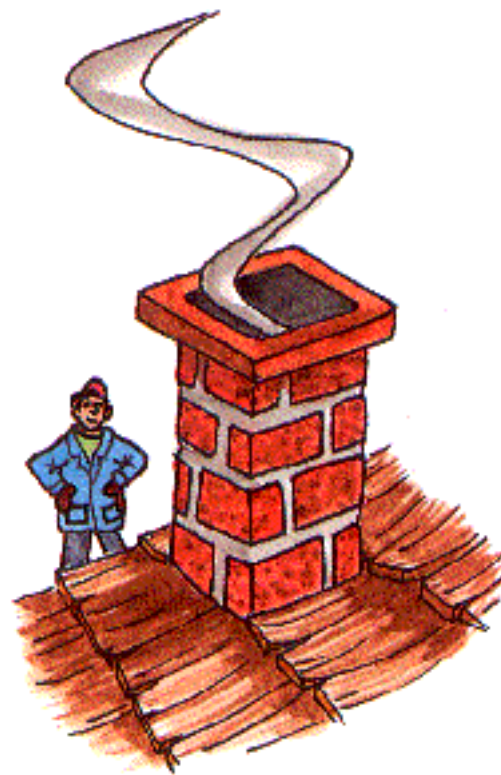
9. Heating in Warmer Weather

If a small space heater won't suffice, open the air controls wide and build a **small, hot fire**, using more finely split wood, and let it burn out. Trying to reduce the heat from a big fire by reducing its air supply leads to smoldering, creosote buildup and air pollution.

10. Watch for Smoke Signals!

Get into the habit of glancing out at your chimney top every so often. Apart from the half hour after lighting and refueling, a properly burning fire should give off only a thin wisp of white steam.

If you see smoke, adjust your dampers or air inlets to let in more air. **The darker the smoke, the more pollutants it contains** and the more fuel is being wasted.



11. Inspection and Upkeep - For Safety's Sake

Periodic **inspection** of your stove or fireplace is **essential** to ensuring its continued safe and clean-burning operation. Be sure you carefully check, and repair as needed, the:

- **Chimney Cap** can be plugged by debris which will reduce draft.
- **Chimney** should be cleaned professionally **at least once a year** to remove creosote buildup.

Catalytic Combustor holes can plug up; follow instructions to clean.

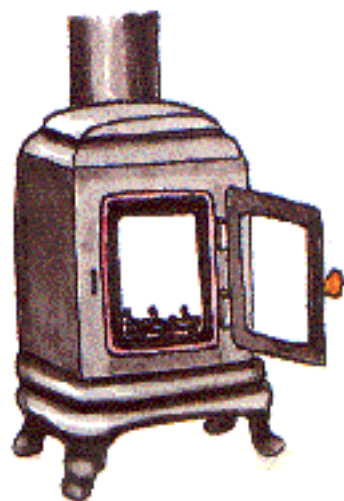
Stovepipe angles and bolts are particularly subject to corrosion.

Gaskets on airtight stove doors need replacement every few years.

Seams on stoves sealed with furnace cement may leak. Eventually the cement dries out, becomes brittle, and may fall out.

Firebrick may be broken or missing.

Grate or stove bottom where the fire is built - this may crack or break.



NEVER FORGET That There is a Box With a **FIRE** in it Inside Your House. Creosote Buildup Can Fuel a Chimney Fire That'll Burn Your House Down.

Do You *PAY MORE* to Heat With Wood?

The chart below shows you which woods will produce the most heat per cord, and will help you compare your conventional home heating fuel to wood. Pound for pound, all woods have about the same heating value. **But hardwood logs are heavier and denser than softwood logs and burn longer, providing more heat per log.**

Firewood	Available Heat
Tree Species	(Million Btu/Cord)
60% Efficient Stove	
Alder	19
Almond	24
Apple	24
Cedar	14
Cherry	19
Eucalyptus	20
Elm, American	17
Fir, Douglas	19
Fir, White	15
Hemlock	14
Locust, Black	24
Madrone	24
Oak, Live	24
Oak, Red	21
Oak, White	23
Maple	19
Pine, Ponderosa	12
Pine, Sugar	12
Pine, White	12
Poplar	12
Redwood	12
Sycamore	18
Walnut, Black	20
Walnut, English	20
Willow	12

One Million Btu of Fuel* Equals:

293 kilowatt hours of electricity;

12.5 therms of natural gas; or

13.6 gallons of propane.

1. What Do You Pay for a Unit of Fuel?

Check Your Utility Bill For Your Unit Price.

If you pay \$0.60 per therm for natural gas, one million Btu of gas will cost you $12.5 \times \$0.60 = \7.50 .

2. What Did You Pay for a Cord of That Wood?

You just bought a cord of Almond for \$195. Almond wood has a heat value of 24 million Btu per cord, burned in a 60% efficient stove.

3. How Does Heating with Gas Compare to Burning a Cord of Almond ?

You would pay $\$7.50 \times 24 = \180 for gas, \$15 less than you paid for the cord of Almond.

In most areas of California you will pay more to heat with wood than to heat with gas, and less to heat with wood than to heat with electricity.

However, if you get a new, certified stove and your new stove's heating efficiency is 80%, you can increase the Btu **heat energy available** in each cord of wood by 20%. Using the example above, a cord of Almond burned in an 80% efficient stove would have 28.8 million Btu of heat, not just 24. You would pay $\$7.50 \times 28.8 = \216 for 28.8 million Btu of gas, or \$21 more to heat with gas than with your \$195 cord of Almond.

* Assuming an energy conversion process efficiency of 100% for an electric heater, 80% for a natural gas furnace, and 80% for a propane furnace. New model gas furnaces achieve up to 95% efficiency.

Model Woodburning Ordinance

In 1998, the Bay Area Air Quality Management District developed a model woodburning ordinance to guide cities and counties wishing to regulate woodsmoke in their communities. Studies continue to demonstrate a link between particulate pollution and an increased incidence of disease and mortality. On an average winter day, about 40 percent of all Bay Area particulate pollution comes from woodsmoke.

If adopted by a Bay Area city or county, this ordinance would allow the installation of gas fireplaces, pellet stoves, or EPA-certified wood stoves in new housing or in the remodeling of homes with fireplaces.

The ordinance also includes a provision that prohibits woodburning when the Air District issues a Spare the Air Tonight advisory (see back cover).

For information on the model woodburning ordinance, contact the Air District's Public Information Office at (415) 749-4900.



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Need More Information? Call Us!

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109

Phone Numbers

Public Information Office	1 (415) 749-4900
Bay Area Air Quality Reports	1 (800) HELP AIR
<ul style="list-style-type: none">• Daily Air Quality Readings• Spare the Air Tonight Requests• Agricultural Burn Days	
Industrial/Residential Complaints	1 (800) 334-ODOR
Report Smoking Vehicles	1 (800) EXHAUST
All Other Air District Business	1 (415) 771-6000

Websites

www.baaqmd.gov
www.sparetheair.org

The Bay Area Air Quality Management District was founded in 1955 to help reduce air pollution from industrial operations, motor vehicles, and residential sources in the Bay Area. The Air District covers Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwest Sonoma, and southern Solano counties.

IT'S IN YOUR NEIGHBORHOOD !

Air pollution in the Bay Area doesn't just come from heavy industry and automobiles. It's also produced in your neighborhood during the winter months by woodburning.

On cold, still nights, it's common for an air inversion to cause a blanket of woodsmoke to hug the ground. While the smell of woodsmoke may conjure up festive thoughts, its health effects are anything but charming. Woodsmoke contains harmful gases such as carbon monoxide, hydrocarbons, and oxides of nitrogen; toxic substances like formaldehyde, benzene, and dioxin; and microscopic particles that may be trapped in your lungs for years.

An even greater amount of these pollutants is emitted into the night air if your wood is burned improperly. **To minimize woodsmoke pollution from your fireplace or woodstove, LIGHT IT RIGHT!**

Call the Air District for —

- ▲ More Woodburning Tips
- ▲ Daily Air Quality Reports
- ▲ "Spare the Air Tonight" Advisories
- ▲ Clean-Air Tips for Your Home and Car

Light It Right !

HOW TO BEST LIGHT YOUR FIRE!

Manufactured logs burn cleaner than wood logs, with less ash to clean up afterwards.

If you use wood, ***burn only dry, seasoned wood.*** Much of a log's energy must be used to burn off excess moisture — energy that would otherwise go toward heating your home. Less-seasoned wood also produces more harmful air pollutants.

Start a small fire using softwoods. Softwoods (such as pine and fir) ignite easily and burn fast to heat up the flue and firebox quickly.

Add larger hardwood logs after the fire is going. Denser, split woods (such as oak and madrone) will burn longer and more evenly, thus producing more heat energy than softwood logs.

Don't burn garbage, glossy paper, or wood that has been painted or chemically treated. All these materials can release harmful toxic chemicals.

Where there's smoke, there's a bad fire. Excess smoke is a good sign that your fire wasn't lit properly or isn't being burned correctly.

1-800-HELP AIR

Spare the Air Tonight

On the handful of nights when pollution levels are expected to approach unhealthy levels, the Air District encourages Bay Area residents to refrain from burning wood unless clean-burning woodstoves and fireplaces are used. On such days, a "Spare the Air Tonight" advisory will be issued at 10 am for that night. Call 1-800-HELP AIR to check the Bay Area's daily air quality report.